



Cavendish Beef Farm

Odour Control Management Plan

January 2023

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Odour Control Management Plan

OCMP

1.0 Background

The operation of a livestock farm, consistent with normal and acceptable farm practices, will produce farm related odours. Whereas farm odours can impact residents, visitors and the community, farms must constantly work towards controlling, indeed reducing strong farm odours. In recent years there has been a trend of fewer odour complaints in vicinity of Viking Fur Farm Inc. The preparation of the Environmental Impact Statement (EIS) ordered in 2019 by the Provincial Government and released from further assessment by the Province in September 2022, has resulted in changes to farm practice which have reduced odours.

This Odour Control Management Plan (OCMP) has been developed for the entire farm, including the existing mink farm and the expansion to the beef herd. The OCMP is an essential part of Viking's operational management system and addresses how the odours will be managed and controlled to minimize community impacts.

The application of best management practices and the use of available technology from an environmental and economic perspective, is fundamental to minimizing the formation of odours and subsequent release to the atmosphere. The implementation of appropriate administrative procedures such as when/where to spread manures and physical actions, such as controls applied at the source, ie. covers on manure tanks, help control odour formation and dispersal.

The OCMP includes an overview of odour sources, mitigations, public consultation, monitoring and Viking's response to complaints.

2.0 Odour Sources and Mitigations

| Principle Odour Sources | Brief Description | Odour Control/Mitigation | Discussion | Schedule |
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| Cattle grazing | Year round grazing on pasture | <ul style="list-style-type: none"> • Low density of cattle • High natural dispersal of manure • Bi-weekly inspections of the entire pasture areas to ensure no accumulation of manure or mortalities. | <p>Beef farms/regional pastures are not known to have odour issues in NL Discussions with other provinces have also stated odours have not been a problem on beef farms which rely on outdoors pasture.</p> <p>Aerobic (with oxygen) decomposition of cattle produces low odours.</p> | Ongoing. |
| Mink barns and liquid/solid manure separator | Mink rearing/feeding barns | <ul style="list-style-type: none"> • Addition of hydrated lime underneath mink cages • Prompt removal of mortalities • Composting of manure solids from separator; collection of liquids in storage tanks. • Install shelterbelts along Route 80. • Evaluate the potential of a mechanical ventilation as compared to the existing passive ventilation. • Investigate dietary options to reduce ammonia • More frequent dust control | <p>The farm's responsibility is to maintain dry, well ventilated mink sheds.</p> <p>The solid manure is an odour source which is collected at the separator and composted or spread on fields.</p> | <p>Current term</p> <p>Current term</p> <p>Current term</p> <p>Longer term</p> <p>Current term</p> <p>Longer term</p> <p>Short term</p> |
| Manure Storage tanks | Manure from barn gutters is piped to open top tanks of liquid manure. | <ul style="list-style-type: none"> • Emergency shut-off valves and anti-siphoning systems control accidental releases. | <p>Viking installed synthetic impermeable covers tank covers in the spring of 2022.</p> <p>Odours from the storage will be reduced by greater than 95%.</p> <p>Anaerobic digester/membrane/scrubber systems shall be evaluated, however extremely expensive option.</p> | <p>Current</p> <p>Long term</p> |
| Feed Kitchen | Receipt of feed stuffs. | <ul style="list-style-type: none"> • Mink feedstock is transported from trucks to stainless steel container and augured into | Additional controls are not required. | |

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| | Preparation and storage of mink feed. (primarily chicken and fish offal.) | <p>grinders; placed in plastic containers and frozen</p> <ul style="list-style-type: none"> • All feed materials are frozen within 24 hours. • Feathers covered /contained no more 1 truckload of feathers on the farm at any time. • Feed kitchen washed down daily and disinfected weekly; fish pans cleaned immediate after product is removed. • All waste water from washdown is dispense through a septic system following the removal of solids. | However, Viking has decided the floor will be re-surfaced to facilitate cleaning. This action will reduce the opportunity for odours. | Short term |
| Carcass Composting | Carcasses are composted in windrows in the compost shed. | <ul style="list-style-type: none"> • Carcasses are composted with bedding as the primary carbon source. (carcasses and bedding are layered) • Shed has a roof and concrete floor. • Windrow temperature and moisture are monitored and recorded to determine when the compost needs to be turned. | <ul style="list-style-type: none"> • Viking will investigate the potential to use alternatives/amendments for ammonia and odour reduction. Note: most of the composting takes place in the winter when odours are less likely to be significant. • Post composting, the compost is left to mature. Viking will investigate extending the maturation period before the compost is moved or used on the farm, to reduce odours. | Short term |
| Manure Spreading | Land application of liquid manure | <ul style="list-style-type: none"> • Currently, Viking's manure spreader allows the manure to be spread close to the ground • Weather forecasts, notably wind is checked to determine optimum times to spread manure. • HD-I town is informed of manure spreading 24 hours in | <p>The EIS determined, in part based on public input, the area between Viking Farm and the southern part of Hearts Delight-Islington was the area most prone to odours.</p> <ul style="list-style-type: none"> • As of 2021 manure is no longer spread on the oceanside of Route 80 in the summer. This action would remove spreading at the time of year when temperatures and humidity are highest; when prevailing winds are in the direction of HD-I and | <i>Short term</i> |

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| | | advance. Weekends and special event are avoided. | <p>during the busiest time of the year for the tourist industry. It is also the time when residents spend more time outdoors.</p> <ul style="list-style-type: none"> • Viking will spread manure based on its Nutrient Management Plan (NMP) which is updated every three years. (Plan is based on nutrient content in the manure and nutrient levels in the soil). Note NMP was updated in 2021 which recommended different application rates per field in response to the different nutrient levels in the fields. Viking has applied limestone on forage fields which will increase the efficiency of nutrients. Soil testing on these fields and on pasture where manure is spread will be tested on a yearly basis to fine tune manure application based on knowledge of fertility status of the soil. The expanded land base will reduce spreading rates per acre which will reduce odour intensity as thinner application rates will reduce the amount of time the liquid manure is exposed to the air. • Viking will continue to investigate manure injection systems, however preliminary assessments indicate new technology would not be compatible with the farm's shallow, stony soils. Injection systems reduce odour during spreading. | <p>Implemented</p> <p>Medium term</p> <p>On-going</p> <p>Short term</p> <p>On-going</p> |
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3.0 Public Consultation, Engagement and Monitoring

The EIS included extensive public consultation, including public meeting/information sessions and direct consultation with tourism operators. The people who complained of odours (mostly located in the Islington area of Hearts Delight-Islington), requested improved communication and immediate response to their complaints. Concurrently, during the preparation of the EIS, Viking proceeded with a change of farm practice whereby manure would no longer be spread on the oceanside of the highway in the summer. In addition, impermeable covers were placed on the manure storages. Based on anecdotal information and the lack of formal complaints, there was reason to believe these actions resulted in a reduction of farm odours which had been a concern to residents/tourism operators, primarily north of the farm in the Islington area of the Town of Hearts Delight Islington. The EIS explained it would be necessary to monitor the situation to determine if this 'improvement' would continue in future years.

Viking will continue and expand its public communication as follows:

- In April meet with the Town of Hearts Delight Islington for a general discussion of the farm's plans for the upcoming year (eg. land clearing/farm land development) and commit to informing the Town of planned manure spreading at least 24 hours in advance of spreading.
- In November contact the following to discuss farm operations and any odour events/concerns over the previous six months:
 - Tourist operations in the area north (downwind of prevailing winds)
 - Town of Hearts Delight-Islington
 - Those who registered complaints in the previous six months
 - Service NL
 - Tourism Branch of the Provincial Government
- A week after manure spreading, Viking will contact the town of Hearts Delight-Islington to determine if there were significant odour occurrences/concerns.
- Consider an Open House in the Farm's Office building (November) This would focus on any initiatives to reduce odours and/or discuss concerns related to the farm operations, including but not limited to odours.

Response to Complaints

Viking will respond /investigate a complaint within 24 hours of receipt. The farm will complete the form, Odour Assessment Checklist. Viking will forward the results of the investigation/assessment to Service NL and the applicable municipality within 24 hours of completion.

4.0 Odour Assessment Checklist

Type of Complaint: _____ Location of Complaint _____

Date/Time of complaint: _____

Weather:

Wind Direction /wind speed: ____ / ____ Source (1) _____

Cloud Cover % overcast: _____ Humidity: _____ Source (1) _____

Farm Activity:

Manure spreading:

- Identify the particular field: _____
- Time and duration of spreading: _____

Compost Turning:

- Time and duration of turning: _____
- Description of odours: _____

Manure Storage Tanks: Describe activity and odour:

Other activities on the farm – particularly those which are different from previous days(s)

Visit to location of Complaint: Describe intensity/type of odour:

Time, date of explanation to complainant.: _____

Recorder of the Complaint: _____ Date: _____

Site and Management Staff contacted during the review:

1. _____
2. _____
3. _____