

August 11, 2022

Manitoba Environment, Climate and Parks
Environmental Approvals Branch
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Attention: Siobhan Burland Ross, M. Eng., P. Eng. – Environmental Approvals Branch

Reference: Meadowbrook Village Lagoon Decommissioning

Subject: Lagoon Decommissioning Plan

1. Introduction

Burns Maendel Consulting Engineers (BMCE) has been retained by 6843191 MB Ltd. (Meadowbrook Village) to provide the engineering services required to decommission their previous wastewater lagoon. As such, BMCE is pleased to provide our decommissioning plan for review by Environmental Approvals Branch of Manitoba, Environment Climate and Parks (MECP).

2. Background

Meadowbrook Village is located in the southeast quarter of 33-10-18 WPM in the RM of Cornwallis. Meadowbrook Village is currently bounded by the new wastewater lagoon to the north, Glen Lea Golf Course to the west and south, and privately owned residences to the east. The original park was constructed in the 1970's along with the previous wastewater treatment lagoon located on the northeast quarter of 33-10-18 WPM. As the park grew, more capacity was needed in the previous lagoon and license # 2441 was issued for a two-cell expansion February 18, 2000. However, the expansion was halted mid-construction due to poor site conditions, and the two additional cells have remained unfinished to date.

After the unfinished expansion, the park continued to expand, and the previous lagoon remained overloaded. BMCE was retained for engineering services regarding the expansion and necessary upgrades required to accommodate the increased population and future expansions.

BMCE conducted a feasibility study to determine the best course of action for wastewater treatment for Meadowbrook Village. It was found that continuing the expansion to upgrade the existing lagoon would be infeasible. The study concluded a new lagoon should be constructed, and the old lagoon be decommissioned.

In 2018 a new lagoon was constructed approximately 70m north of the previous lagoon. As part of section 48 of License No. 3328 R. for the current wastewater lagoon, a detailed decommissioning plan of the previous lagoon is required.

3. Current State

The previous lagoon is located approximately 150m north of Meadowbrook Village and is awaiting decommission. It has remained out of service since the construction/commissioning of the current lagoon in 2018.

The previous lagoon has never had sludge removed from it during its operation and as such is assumed to contain large amounts of biosolids. As part of the decommissioning process the existing biosolids must be disposed of, berms must be leveled, and the site regraded and reseeded to promote drainage.

The disposal of biosolids is a Class 2 development under The Classes of Development Regulation (Manitoba Regulation 164/88), therefore, an Environmental Act Proposal (EAP) is required. The EAP will be drafted pending approval of this decommissioning plan.

4. Decommissioning Plan

As part of the decommissioning plan there are 5 requirements that must be addressed:

- Volume of solids to be removed,
- Method of removal,
- Destination of biosolids,
- Restoration of the previous lagoon site, and
- Time frame.

4.1. Volume of Biosolids

BMCE conducted a survey of existing sludge volumes in the winter of 2017. However, snow hindered the survey, and the accuracy of the sludge depths should be considered an estimate until additional survey can be conducted. The estimate was calculated based on the average sludge depths from both cells, along with the cells respective areas to determine the volumes of sludge.

Cell	Estimated Sludge Volume
Primary	570 m ³
Secondary	1460 m ³

Pending additional survey, an updated sludge volume will be determined for each cell. This will be included in the EAP for decommissioning, provided at a later date.

4.2. Method of Removal & Destination

Any effluent inside of the previous lagoon will be pumped to the primary cell of the new lagoon. The remaining solids will be left to dry for approximately 3-4 weeks in the bottom of the cells. Equipment will then be used to pile solids on the sides of the lagoon for an estimated additional 2 weeks for further drying.

If at the end of the estimated drying time, the solids are not sufficiently dry, additional time may be provided.

Following the drying of the biosolids, a nutrient management plan will be created to determine appropriate loading rates and locations for the biosolids application. Maximum loading rates for these fields will be calculated and if compatible, biosolids will be transported and applied appropriately.

4.3. Site Restoration

Once removal of the solids has been completed the existing berms of the 4 cells will be leveled to promote drainage and reestablish vegetation, decommissioned forcemains will be capped and left in place. Existing cells will be filled and mounded to provide positive drainage away from the previous cells location. Once the previous cells have been filled, compacted, and graded it will be seeded to return the location to its natural condition.

4.4. Time Frame

The following is an estimated schedule of the above-mentioned decommissioning plan and approvals.

EAP submission – March 2023

Licensing – December 2023

Decommissioning – Fall 2024

Including:

- Emptying of old treatment lagoon,
- Drying period of solids,
- Hauling,
- Spreading, and
- Leveling, grading, and seeding.

A more detailed project schedule will be included in the decommissioning EAP.

Yours truly,
BURNS MAENDEL CONSULTING ENGINEERS LTD.



Ashley Haigh, P.Eng.
Civil Engineer