



April 13, 2018

WSP Project No. 181-00722-00

Ms. Tracey Braun, M.Sc., Director
Manitoba Sustainable Development
1007 Century Street
Winnipeg, MB R3H 0W4

Dear Madam:

Subject: Existing Wastewater Treatment Lagoon – EAL No. 1189 R
Client ref.: File No. 396.10 Decommissioning Plan

The Riverdale Municipality (RM) has received a Environment Act Licence (No. 1189 R) for the construction of a wastewater treatment lagoon replacement. The existing lagoon will be decommissioned after the new facility is operational.

Clause 35 of Environment Act Licence No. 1189 R addresses the need for a decommissioning plan to be submitted to the Director prior to the commencing construction on the new wastewater treatment lagoon for the RM. The plan must address the following items:

- 1 The volume of sludge to be removed from the existing lagoon cells and the sludge cell;
- 2 The method of sludge removal;
- 3 The disposition of the removed sludge;
- 4 Site restoration activities; and
- 5 Timeframe of the plan.

WSP Canada Inc. (WSP) has drafted this plan on behalf of the RM, in anticipation of the lagoon construction in 2018. The following decommissioning plan has been prepared and submitted for review and approval by Manitoba Sustainable Development.

Sludge Volume

The existing RM wastewater treatment lagoon located south of the Town of Rivers (i.e. in SE23-12-21W and SW24-12-21W) was constructed in the mid-1950s. Since that time, the sludge within the primary cell has been removed once (i.e. more than 20 years ago) when potential overtopping became an issue. At the time, a sludge storage holding area was constructed adjacent to and north of the existing primary cell for temporary placement and dewatering of the sludge. The storage area remains and the RM has indicated to WSP that the sludge has been removed.

At least 20 years have passed since the previous sludge removal and disposal. Based on initial observations there will be a quantity of accumulated sludge, mainly septage, in the primary cell. There are methods to determine the sludge volume within a lagoon while it remains active. WSP believes that the practical approach is to wait until after



the new lagoon is commissioned and brought into operation. At that time, there will be the opportunity for the existing lagoon cells to dewater naturally. The existing lagoon cells will receive a perimeter fence as part of the new lagoon construction.

When the cells have sufficiently dried out, WSP will take and review core samples through the top 0.3 m (min.) of the cells. Based on the findings, we will determine a volume of sludge within the cells. Since the liquid flows through an overflow pipe into the secondary cell, we do not anticipate the need for sludge removal from the secondary cell. The RM has indicated that the cell has been basically dry for many years. If, however, sludge is present, it will be moved to the primary cell.

The dewatered sludge will be bladed into windrows throughout the primary cell and twice annually (spring and fall) the RM will turn the windrows. Like composting, air, bacteria, fungi and sunlight will condition organics and nutrients in the sludge. The treatment is assumed to require 10 years during which time the perimeter fence will be maintained.

Sludge Removal

The typical requirement for lagoon decommissioning is the removal of sludge from the former lagoon area. With the timeframe proposed in this plan, we anticipate the sludge to be conditioned to the point where it can be placed as a top dressing on the levelled area of the former cells. Seeding will be the final step in the process.

Disposition of Removed Sludge

N/A

Site Restoration Activities

WSP will take and review core samples through the top 0.3 m (min.) of the existing primary cell. Based on the findings, the area has been levelled, the conditioned sludge will be placed as a top dressing complete with seed to complete the work. If necessary, drainage will be directed around the site and the perimeter fence could be removed.

Timeframe

Construction of the new lagoon: 2018

Dewatering of the existing cells: 2019

Windrowed sludge and turnover: 2020-2030

Final leveling of site and conditioned sludge placement: 2030

Removal of fence (if necessary): 2030

WSP believes that our proposed decommissioning plan is the best approach and provides value to the RM and Manitoba Sustainable Development. The approach for dealing with accumulate sludge within the existing lagoon addresses this situation. If you would like to discuss this further, please contact the undersigned.

Kind Regards,

Dan Dankewich, M.Eng., P.Eng.
Senior Engineer, Infrastructure

cc: Kat Bridgeman – CAO, Riverdale Municipality
cc: Glen Newton – Glen Newton & Associates Inc.