



REPORT

To: Solid Waste Committee

Report Number: ENV-SWC-155

From: Gerritt Lacey, Solid Waste Manger

Date: April 5, 2024

Subject: Dawson Creek Closed Landfill Impact Assessment & Conceptual Regrading Plan Update

RECOMMENDATION:

That the Solid Waste Committee receive the report titled "Dawson Creek Closed Landfill Impact Assessment Update ENV-SWC-155", which provides committee members an update on works completed for the Dawson Creek Landfill since the completion of the 2021 Closure Plan prepared by GHD, for information.

BACKGROUND/RATIONALE:

The Dawson Creek Landfill stopped receiving waste between 2000 and 2002. In 2021 the Peace River Regional District (PRRD) commissioned a closure plan for the closed landfill as part of the regulatory requirements of closing a landfill. The closure plan was completed by GHD, and recaps the site history, the site setting, the closure design, the existing conditions, the leachate and landfill gas generation potential, and the risks to human health. Upon completion of the closure report, GHD identified 6 recommendations:

1. Remove the scattered litter and cover exposed waste on the landfill;
2. Develop a cover rehabilitation program to ensure a continuous presence of final cover over the waste and a minimum grade of 5%. The final cover rehabilitation program should include an assessment of whether the final cover requires armoring below the 1:200 year return period elevation of Dawson Creek;
3. Complete a focused risk assessment on the impact of leachate migration from the landfill through the creek meander to Dawson Creek;
4. Establish a soil gas monitoring program at the north property boundary;
5. Replace well BH-98-1 as recommended by Matrix; and
6. Continue to perform the current groundwater and surface water monitoring program, as recommended by Matrix.

Through 2022 and 2023, the PRRD worked with GHD to complete the focused risk assessment on the impact of leachate migration from the landfill to surface and ground water sources. The assessment evaluated the condition of the current cover system, the leachate generation potential of the landfill, and the results of the ongoing ground and surface water monitoring program for the site. The results of the water monitoring program note that elevated concentrations of select parameters associated with landfill leachate have been present in the downgradient wells. These elevated parameters have been present since 1999, and while these concentrations have exceeded the regulatory requirements, they have stabilized over the past several years and in some cases are decreasing.

As a result of completing the risk assessment for the site, GHD recommends continuing to monitor the groundwater and surface water programs, to test pit the cover system to determine the hydraulic conductivity, and to implement a cover rehabilitation program. The scope of the cover rehabilitation program would include:

- Test pitting the cover system to confirm hydraulic conductivity;
- Regrading steepened slopes;
- Regrading areas of ponding water;
- Adding additional cover soils;
- Removing or covering exposed waste;
- Developing soil gas monitoring program;
- Assessing and designing of armoring the banks of Dawson Creek if required; and
- Managing and redirecting surface water at the transfer station.

Design work for the rehabilitation plan is planned to take place in 2025.

ALTERNATIVE OPTIONS:

1. That the Solid Waste Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

- ☒ Asset and Infrastructure Management

FINANCIAL CONSIDERATION(S):

A conceptual regrading plan was prepared by GHD to assist with estimating the cost of the rehabilitation program. At this time, the estimated cost to remediate the cover system is \$780,000. However, this is the cost of the repairs to the side slopes only and does not include armoring the creek or paving the transfer station should it be required. Should the paving and armoring be required, the cost of the project could increase to upwards of \$2,500,000.

In Q4 of 2024, a formal business case will be presented to the Solid Waste Committee for consideration to design the cover rehabilitation works in 2025 and to repair the site in 2026.

COMMUNICATIONS CONSIDERATION(S):

None at this time.

OTHER CONSIDERATION(S):

As part of the 2024 Solid Waste Capital program, the PRRD is replacing wells BH-98-1 and DC-BH101 as recommended by GHD and installing 5 new monitoring wells for continuation of the surface and ground water monitoring program. With completion of the rehabilitation program in 2026, all recommendations made through the 2021 closure plan will be completed. Ongoing monitoring of the surface and ground water program will continue until a time that a Qualified Professional can determine the program is no longer required.

Attachments:

1. 2021 Dawson Creek Landfill Closure Plan and Assessment
2. 2023 Dawson Creek Groundwater and Surface Water Impact Assessment
3. 2023 Dawson Creek Landfill Conceptual Regrading Plan Memo